Amendments to the Claims

1-20. Cancel

21. (New) A joined object soldered with the use of a method of soldering a lead-free solder which comprises:

melting the lead-free solder which is an alloy of tin with no lead contained; and

applying ultrasonic vibration to at least one of the lead-free solder, an article, and a member to be joined to the article by the lead-free solder when solidifying the molten lead-free solder, to increase joining strength between the article and the member.

22. (New) The joined object according to claim 21, wherein the ultrasonic vibration forms fine crystals of components contained in the lead-free solder and prevents segregation of the contained components, and increases the joining strength between the article and the member.

23. (New) The joined object according to claim 21, wherein at a joining interface of the lead-free solder to at least one of the article and the member, the ultrasonic vibration forms fine crystals of components contained in the lead-free solder and prevents segregation of the contained components, and increases the joining strength between the article and the member thereat.

24. (New) The joined object according to claim 22, wherein the ultrasonic vibration is such that makes fine crystals of components contained in the lead-free solder and prevents segregation of the contained components at a joining interface of at least one of the mount article and the member to be mounted, and increases the joining strength between the mount article and the member to be mounted at the joining interface.

25. (New) The joined object according to claim 22, wherein the contained components include a metal acting to decrease a melting point of the lead-free solder.

26. (New) The joined object according to claim 23, wherein the contained components include a metal acting to decrease a melting point of the lead-free solder.

27. (New) The joined object according to claim 24, wherein the contained components include a metal acting to decrease a melting point of the lead-free solder.

28. (New) The joined object according to claim 23, wherein, when the article and the member contain Cu, the ultrasonic vibration is such that increases a thickness of a layer of a compound of Sn included in the lead-free solder and the Cu, the compound existing at the joining interface, and increases the joining strength between the article and the member at the joining interface.

29. (New) The joined object according to claim 22, wherein, when the article and the member contain Cu, the ultrasonic vibration is such that increases a thickness of a layer of a compound of Sn included in the lead-free solder and the Cu, the compound existing at the joining interface, and increases the joining strength between the article and the member at the joining interface.

30. (New) The joined object according to claim 25, wherein, when the article and the member contain Cu, the ultrasonic vibration is such that increases a thickness of a layer of a compound of Sn included in the lead-free solder and the Cu, the compound existing at the joining interface, and increases the joining strength between the article and the member at the joining interface.

31. (New) The joined object according to claim 26, wherein, when the article and the member contain Cu, the ultrasonic vibration is such that increases a thickness of a layer of a compound of Sn included in the lead-free solder and the Cu, the compound existing at the joining

interface, and increases the joining strength between the article and the member at the joining interface.

32. (New) The joined object according to claim 27, wherein, when the mount article and the member to be mounted contain Cu, the ultrasonic vibration is such that increases a thickness of a layer of a compound of Sn included in the lead-free solder and the Cu, the compound existing at the joining interface, and increases the joining strength between the mount article and the member to be mounted at the joining interface.

33. (New) The joined object according to claim 21, wherein the lead-free solder has a Sn-Ag based composition as a main ingredient.

34. (New) The joined object according to claim 32, wherein the lead-free solder has a Sn-Ag based composition as a main ingredient.

35. (New) The joined object according to claim 33, wherein the contained components include an alloy component of the Sn-Ag.

36. (New) The joined object according to claim 34, wherein the contained components include an alloy component of the Sn-Ag.

37. (New) The joined object according to claim 25, wherein the melting point decrease action metal is at least one of Bi, Cu, Zn and In.

38. (New) The joined object according to claim 28, wherein the melting point decrease action metal is at least one of Bi, Cu, Zn and In.

39. (New) The joined object according to claim 33, wherein the melting point decrease action metal is at least one of Bi, Cu, Zn and In.